Amendments to the Specification

Please amend the paragraphs of the section entitled "CROSS-REFERENCE TO RELATED APPLICATIONS," found on page 1, lines 5-14, as set forth below:

CROSS-REFERENCE TO RELATED APPLICATIONS

This patent application is a divisional application of U.S. application number. 10/116,800, filed on April 5, 2002. U.S. application number 10/116,800 ~~This application~~ claims the benefit of U.S. provisional application number 60/332,370 filed November 15, 2001 for "Waveguide-Bonded Optoelectronic Devices" by Daniel Yap ~~and Keyvan Sayyah~~, the disclosure of which is hereby incorporated herein by reference.

This application is related to a provisional patent application entitled "Agile RF-Lightwave Waveform Synthesis and an Optical Multi-Tone Amplitude Modulator" (Attorney Docket 618837-7) bearing serial number 60/332,367 and filed November 15, 2001, and its corresponding non-provisional application bearing serial number 10/116,801 and filed April 5, 2002 ~~on the same date as the present application~~ (Attorney Docket 619578-0), the disclosures of which are hereby incorporated herein by this reference. These related applications are owned by the assignee of this present application.

Please amend the paragraph bridging pages 11 and 12 of the specification (see line 17 on page 11 through line 11 on page 12) as indicated below:

Two examples of waveguide-bonded optoelectronic devices utilizing the present invention will now be discussed. The first device is a wavelength selective amplitude encoder. Such an encoder may be used to form an optical-frequency filter with a shaped frequency response. A block diagram of this shaped filter is shown in Figure 2a. This device is also described, for use in a specific application, in US Provisional Patent Application Serial Number 60/332,370 filed November 15, 2001 and its ~~and its~~ corresponding non-provisional application bearing serial number 10/116,801 filed April 5, 2002 ~~on the same date as the present application~~. The shaped filter consists of an optical waveguide trunk 100 that is coupled to a sequence of microresonator elements 102_1, 102_2 ... (the subscripts are used to identifiy particular ones of the elements 102 in the sequence). Each microresonator element 102_1, 102_2, ... is coupled to an associated outlet waveguide segment 106_1, 106_2, ... Each microresonator element 102_1, 102_2, ... couples light of a selected range of frequencies from the waveguide trunk 100 into its associated outlet waveguide 106_1, 106_2, ... The frequency band and the amount of light coupled out can be adjusted electrically. The electrical adjustment is accomplished by applying control voltages to the microresonator elements 102, which functions as a waveguide-coupled electroabsorption modulator, via its control line 104_1, 104_2, ... The frequency band is controlled by controlling the length of time it takes light to travel the circumference of the microresonator, which is done by applying a voltage across the contacts 20 depicted in Figure 1, so each control line 104 could be implemented by a pair of wires coupled to the contacts 20 of each microresonator 102.

Please amend the paragraph bridging pages 14 and 15 (see line 21 on page 14 through line 20 on page 15 as set forth below:

Another example of a waveguide bonded optoelectronic device is an all-optical discriminator 200 for an optical frequency-modulation receiver. This discriminator 200 is illustrated in Figure 3a. The basis idea for this discriminator is described in PCT Application Number PCT/US00/23935 published as WO/01/29992 A1 on [[-------------]]April 26, 2001. The input frequency-modulated (FM) light is first amplified by a semiconductor optical amplifier (SOA) 202 and then is divided into two paths by an optical-waveguide splitter 204. Light in each path is passed through a separate frequency (or wavelength) filter 206-1, 206-2 whose center frequency is shifted by a pre-set amount to a higher (see the small bandpass graph for filter 206-1) or lower optical frequency of the input FM signal. The filtered light is then sensed by two photodetectors 208-1 and 208-2 that are connected electrically in a differential configuration. The SOA 202, the filters 206 and the photodetectors 208 are active semiconductor elements. The waveguide network consists of an input section 201, the splitter 204, and the interconnect segments 205-1 and 205-2 between the splitter 204 and the filters 206-1 and 206-2 as well as the interconnect segments 207-1 and 207-2 between the respective filters 206-1 and 206-2 and the respective photodetectors 208-1 and 208-2. The metalization contacts 20 as shown in Figures 1, 2c and 2d would be utilized, but are not shown in this view for ease of illustration. The filters 206 can be implemented by the microdisk resonators previously discussed with reference to Figures l (device 10R), 2a, 2b, 2c, and 2d and made using the manufacturing techniques discussed herein. If a resonator of type shown in Figures 2c and 2d is used for each filter 206-1 and 206-2, then, as shown by Figure 3c, filter input waveguides 205-1 and 205-2 would be formed by the waveguide 122 of each filter and filter output waveguides 207-1 and 207-2 would be formed by the waveguide 123 of each filter. The SOAs 202 can also be implemented and made using the devices and manufacturing techniques discussed herein (see device 10L in Figure 1, for example, and the device discussed with reference to Figure 3b below).